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THE SUPERVISOR'S USE OF STANDARD TESTS OF EFFICIENCY

J. CAYCE MORRISON
Chatham, New Jersey

This essay attempts to show how, in one case, standard tests are being applied to actual supervising practice. It describes eight months' practice in a school of fourteen teachers and four hundred pupils. The study was undertaken with a threefold purpose.

If standards or scales have any real value, they should be productive of better classroom teaching: First, teachers and even pupils should come to feel that education is a science; that we should endeavor to know rather than to guess. Secondly, if these standard tests do measure, why not use them in studying the individual child? The school is compelled to assume the problem of educational guidance. It can hope to succeed only in so far as it finds a scientific means of determining the child's several abilities. Thirdly, there is a something that men call public opinion. It confronts every administrator of schools. Its demands on the school are growing more and more urgent. The supervisor must have something tangible to prove his case. He must have more than his opinions to give the public. His work can be measured. It is his duty to explain his standards and interpret the results of his measurements in a way that the public will understand. The community has a right to know exactly for what it is paying.

The improvement of classroom teaching was the one aim in view when the first tests were given. To improve the teaching necessitated reaching the individual; this part of the study is only in its beginning. Reaching the public through the use of efficiency tests has proved an interesting experiment. The results and uses of the tests are described in the order in which the study developed.

ARITHMETIC

The Woody arithmetic tests were given in October to Grades II to VIII inclusive. Mr. Woody himself conducted the tests. He explained them to the teachers and aroused considerable interest on their part. The principal was surprised to see with what eagerness the teachers looked forward to obtaining the results. When the papers were scored, the principal prepared a chart of the results, which was hung in the office. This chart showed the number of rights for each grade on each problem. A teacher, at a glance, could see how her room compared on any problem with every other room. Teachers immediately began to analyze the results and to ask "why." They went over every problem that had caused difficulty and endeavored to find what there was in that particular problem that had troubled their classes.

It was found that problems written in a horizontal line caused more failures than those written in vertical columns. Teachers who had been in the school for some years said that they had never thought of drilling pupils on problems written horizontally. They arrived at the conclusion that there cannot be a too-varied form of attack in studying arithmetic. There was a general tendency not to reduce answers to the lowest terms. One or two classes decided that herein lay the difference between the fellow who drives a nail through and the fellow who drives it through and clinches it.

These informal discussions led to differences of opinion among the teachers as to the best methods or devices for teaching certain steps in arithmetic. One teacher asked for a teachers' meeting to discuss these questions. The meeting was called. What transpired may be shown by a specific example. One teacher asked the teacher of the grade below her how she taught the placing of the decimal point in division of decimals. It was soon discovered that there were three distinct methods or devices practiced by the five teachers. This point is merely illustrative of the general trend of the meeting. It resulted in a better unity throughout the school in the teaching of arithmetic. Teachers saw the necessity of keeping in close touch with what the teachers below them and the teachers above them were doing in every subject.

Teachers began to devise methods for obtaining speed and accuracy. It was generally agreed that throughout the grammar grades a certain time should be set aside for such drill. One teacher worked out a series of tests that were as nearly of the same difficulty as she could devise, and, in addition to the weekly drill, gave a review test on a certain Monday of each month. She gave graph paper to each pupil, who kept a graph of the results of the work throughout the year. One of the tests is given in Table I. Probably the best result obtained from this device was the incentive given the pupil to improve his own record.

TABLE I

ARITHMETIC, GRADE VIII, MONTHLY TEST FOLLOWING UP WOODY TEST

I

Add

$$\begin{array}{r} 23475 \\ 69083 \\ 83498 \\ 64257 \\ 38496 \\ 78254 \\ \hline \end{array}$$

$7864+3976+5897+8032=$

II

$$\begin{array}{r} 900{,}000 \\ -648{,}379 \\ \hline \end{array} \qquad \begin{array}{r} 43{,}086 \\ -19{,}497 \\ \hline \end{array}$$

III

$$\begin{array}{r} 37869 \\ \times 438 \\ \hline \end{array} \qquad \begin{array}{r} 4069 \\ \times 403 \\ \hline \end{array}$$

IV

$68{,}394 \div 72 =$

$98{,}659 \div 862 =$

V

$\frac{1}{3}+\frac{1}{7}=$

$\frac{2}{5}+\frac{1}{9}=$

$\frac{2}{3}+\frac{4}{5}=$

$\frac{1}{16}+\frac{3}{8}=$

$\frac{2}{3}+\frac{1}{3}=$

VI

$\frac{15}{16}-\frac{3}{4}=$

$\frac{2}{5}-\frac{3}{8}=$

$\frac{1}{2}-\frac{1}{2}=$

$\frac{1}{2}-\frac{1}{4}=$

$\frac{1}{5}-\frac{1}{10}=$

VII

$\frac{1}{2}\times\frac{1}{2}=$

$\frac{1}{2}\times\frac{1}{4}=$

$\frac{2}{3}\times\frac{2}{3}=$

$2\frac{1}{2}\times\frac{1}{4}=$

$\frac{3}{8}\times\frac{1}{2}=$

VIII

$$\begin{array}{r} 124\frac{3}{4} \\ 3\frac{1}{2} \\ \hline \end{array} \qquad \begin{array}{r} 150\frac{3}{4} \\ 27\frac{3}{4} \\ \hline \end{array}$$

IX

$\frac{7}{8}\div\frac{2}{3}=$

$8\div\frac{4}{5}=$

$3{,}648\div 50\frac{2}{3}=$

$15\frac{3}{8}\div 5=$

X*a*

$.008\div 800=$

$.25\ \div 250=$

$.84\ \div .021=$

$10\div .1=$

X*b*

$\$600\ \times .16\frac{2}{3}=$

$12\frac{1}{2}\times .12\frac{1}{2}=$

The results of the tests carried over into monthly tests and mid-year examinations. For example, a new teacher gave an arithmetic examination in parts of which more than half her class failed. One part in question was addition of complex fractions. She was asked her purpose in giving the test. Her answer, of course, was that she wanted to find just what her class knew of addition of fractions. She was then asked how much she had learned of the ability of the weaker part of the class in this work. She admitted, "nothing." After looking over a sheet of the Woody arithmetic scale she went back to her room and prepared another test, the results of which gave her a very definite idea of the strength and weaknesses of each pupil in the class. This method of preparing tests was emphasized more or less throughout the school.

Some six weeks after the Woody tests were given, two teachers came to the office and asked if it would be possible to obtain the results of the tests for each child. That was the beginning of the study of the individual child throughout the school on the part of supervisor and teachers. Out of it gradually grew the idea of measuring the child's several abilities in a more accurate way than can possibly be done by teachers' quizzes and examinations.

It was intended to give all the tests again in May. The results for addition and multiplication are included in this report. In Table II the median rights for the October tests are given in the first horizontal line, and the median rights for the April tests in the second line.

TABLE II

	Grade						
	II	III	IV	V	VI	VII	VIII
Addition	6.5	12.7	16.9	22.6	30.0	31.2	33.0
	10.3	16.5	24.1	24.2	29.0	31.6	....
Subtraction	5.9	10.8	13.7	18.7	23.0	23.8	26.6
Multiplication	....	3.3	8.6	14.5	22.2	26.5	29.8
	....	....	19.2	16.5	28.0	29.6	....
Division	....	....	8.5	14.0	19.9	21.7	26.0

The distribution of rights in multiplication tests is given in Table III.

TABLE III

WOODY MULTIPLICATION TESTS. DISTRIBUTION OF RIGHTS IN GRADES IV–VII

RIGHTS	GRADE							
	IV		V		VI		VII	
	Oct.	Apr.	Oct.	Apr.	Oct.	Apr.	Oct.	Apr.
37	....	....	....	....	....	....	....	1
36	....	....	....	....	....	....	1	....
35	....	....	....	....	....	1	....	1
34	....	....	....	....	....	1	....	3
33	....	....	....	....	....	2	1	3
32	....	....	....	....	1	4	....	4
31	....	....	....	....	1	2	1	4
30	....	....	....	....	....	2	3	....
29	....	....	....	....	....	3	4	3
28	....	....	....	....	....	2	4	2
27	....	....	....	1	2	1	2	1
26	....	2	....	....	2	4	2	5
25	....	1	....	....	4	4	2	4
24	....	....	....	....	4	1	3	1
23	....	2	....	....	2	2	2	1
22	....	2	....	1	2	....	....	....
21	....	5	....	3	2	1	4	....
20	....	5	1	3	4	1	2	1
19	....	4	1	1	2	1	....	....
18	....	2	1	2	1	....	1	....
17	....	3	2	....	3	1	....	....
16	....	2	2	6	2	1	1	....
15	1	2	2	5	1	....	2	....
14	....	1	4	3	1	....	....	....
13	2	1	1	....	....	....	....	1
12	3	3	1	....	1	1	....	....
11	2	....	3	....	....	....	....	....
10	3	1	2	....	....	....	....	....
9	2	3	....	1	....	....	....	....
8	6	2	....	1	1	....	....	....
7	1	....	1	1	....	....	....	....
6	1	....	1	1	....	....	....	....
5	5	....	....	....	....	....	....	....
4	5	....	....	....	....	....	....	....
3	3	....	....	....	....	....	....	....
2	1	....	....	....	....	....	....	....
1	....	....	....	....	....	....	....	....
0	....	....	1	....	....	....	....	....
Total cases	35	41	23	29	36	35	35	35
Median	8.6	19.2	14.5	16.5	22.2	28.0	26.5	29.6

A study of Tables II and III indicates which teachers have proved more successful in drilling on the fundamentals. Those who were fortunate in arousing the interest of pupils and in finding new schemes for securing classroom results found their test record improved. The figures given in the tables are a fairly accurate record of the comparative progress made in the respective grades.

LANGUAGE

The Trabue language scale B was given next to Grades IV to X inclusive. The papers were scored according to the method given by Trabue, namely, two points for each right, one point for each sentence almost right, no value to those attempted but wrong. The distribution of scores per grade is given in Table IV.

TABLE IV

Score	Grade						
	IV	V	VI	VII	VIII	IX	X
20	......	......	......	......	......	2	......
19	......	......	......	......	......	5	......
18	......	......	1	3	6	1	4
17	......	......	......	1	3	5	6
16	1	......	2	8	3	7	4
15	......	1	2	3	4	4	......
14	4	2	3	8	5	......	1
13	3	2	2	5	4	......	1
12	6	8	11	3	1	......	......
11	3	5	4	1	......	......	......
10	10	5	6	......	......	......	......
9	......	2	2	1	......	......	......
8	5	1	3	......	......	......	......
7	......	1	1	1	......	......	......
6	5	1	1	......	......	......	......
5	......	......	......	......	......	......	......
4	1	1	......	......	......	......	......
3	......	......	......	......	......	......	......
2	1	......	......	......	......	......	......
Number of cases	39	29	38	34	26	24	16
Median	10.8	11.8	12.2	14.8	15.9	17.3	17.4

Language scale L was given to the third- and fourth-year high-school pupils. Distribution of the scores follows:

	Score															
	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Distribution	...	1	4	2	1	1	1	2	1	2	1	...	...	...	...	...

Table V gives the further results of the tests.

TABLE V

COMPARISON OF RANKS

	Pupil								
	A	B	C	D	E	F	G	H	I
By rhetoric teacher	4	8	1	3	13	16	11	17	12
By literature teacher	2	.....	1	5	8	16	7	14	10
By Trabue language scale L.	6.5	.....	3.5	3.5	14.5	16	9	10	13

	Pupil								
	J	K	L	M	N	O	P	Q	
By rhetoric teacher	9	15	7	10	2	6	14	5	.....
By literature teacher	13	15	9	12	4	6	11	3	.....
By Trabue language scale L.	1	14.5	3.5	11.5	6.5	11.5	8	3.5	.....

Probably the main value of the language test came from the incentive it gave to find other means of analyzing the child mind. Why did one boy in Grade IV score two points and another boy sixteen points? Why did one girl in Grade VI score as high a mark as the best of the second-year high-school students, while thirteen of her classmates did poorer than the median of Grade IV? A study was begun of the pupils who made erratic scores. The pupils were ranked and their relative position in the class compared with their rank in every other test: composition, spelling, arithmetic, reading. If the child ranked low in any particular subject, his class standing was determined from the teacher. Oftimes, a little special attention helped the child out of his difficulty.

SPELLING

The Ayres scale was used in testing spelling. The first test was given late in January. It consisted of 25 words for each grade taken from a list on the scale approximating an average difficulty of 90 for that grade. This test was followed by others at intervals of from two to four weeks. Altogether the results of four tests are used. The lists used in each grade ranged from difficulty 86 to 96 for that grade. Breaking the spelling tests into four parts gave certain advantages. It neutralized the danger of erratic scores, gave an opportunity to check the reliability of the scale as a means of measuring spelling ability, and overcame the administrative difficulty of having every pupil present for the test.

The four marks for each pupil were averaged as his spelling mark. The four standard or scale marks for the class were likewise averaged. This mark is the basis of comparison in the tabulations of Tables VI and VII.

TABLE VI

SPELLING

	Grade						
	II	III	IV	V	VI	VII	VIII
Scale standard	87	90	92.5	92.5	91.5	91.5	92
Class median	92.5	97	96.5	86.5	88.5	90.5	92
Class average	86.6	87.7	90	80.8	85.7	85.3	88.7
No. of cases	35	33	43	33	40	40	31
Percentage of cases below scale standard	35	30	37	81	55	52	48

TABLE VII

DISTRIBUTION OF SPELLING MARKS

Grade	Number of Cases	0–50	51–60	61–70	71–80	81–85	86–90	91–95	96–100
II	35	2	2	1	2	4	7	4	13
III	33	3	0	2	2	1	4	4	17
IV	43	1	3	2	3	3	2	4	25
V	33	1	3	3	3	6	7	7	3
VI	40	1	3	2	4	9	2	7	12
VII	40	1	2	2	7	2	6	7	13
VIII	31	0	1	4	2	3	3	8	10

Tables VI and VII show at a glance the status of spelling in the whole school. No room made an average equal to the scale standard. The median of one grade is equal to the standard for the grade, three medians are below, and three above. The fourth grade had 25 pupils out of 43 to score 96 or above; yet 4 fell below 60, and 37 per cent of the class fell below the standard. Grade V made an exceedingly poor record as a class. Grades VI, VII, and VIII did not make as good a record as they should have made.

Approximately one-third of the pupils in Grades II, III, and IV were below standard.

The spelling tests gave a new impetus to the teaching of spelling. Teachers began to work for better class results, and to give more attention to the poor speller. One teacher said that the tests aroused more interest in spelling among her pupils than anything she had been able to do. Practically every device that could be found which seemed worth trying has been utilized. The words for each grade have been more carefully classified, and greater care has been taken in selecting words from the daily class work. The scale will, after a time, be largely useless to us as a scale, for teachers are drilling their pupils on every word that they miss in the tests; but, if these children master the 1,000 words used most often in the English language, they will have accomplished something worth while.

For several years spelling has been a required subject in high school. A list of 50 words, 25 from column T and 25 from column U of the Ayres scale, was given to Grade VIII and to the high school. The standard for Grade VIII is 86. Distribution by classes is given in Table VIII.

TABLE VIII

DISTRIBUTION. HIGH-SCHOOL SPELLING MARKS

Year	Number of Cases	Class Median	Class Average	–50	–60	–70	–80	–85	–90	–95	–100
VIII	27	86.6	81.5	1	2	4	3	2	7	3	5
IX	24	96	93.5	.....	.....	.....	1	1	4	6	12
X	16	98	96.5	.....	.....	.....	.....	.....	2	4	10
XI	9	96.3	95.3	.....	.....	.....	.....	.....	.....	4	5
XII	8	98	95.0	.....	.....	.....	.....	1	1	1	5

The distribution in Table VIII indicates that the special attention given to spelling in the high school is productive of good results.

COMPOSITION

More attention was given to the test in composition than to any other subject. Compositions were written by all pupils in Grades IV to X inclusive. The subject given was, "My Twenty Dollars."

The written instructions handed to each teacher to give to her class were:

1. Distribute one sheet of paper to each pupil.
2. Have pupils write subject on first line.
3. Say to class: (*a*) "Imagine that you have $20 to spend as you please, and that you want to spend it among four of your best friends." (*b*) "Write a composition of about one page, telling how you spent it."

Before giving the subject, teachers and principal had studied the scale together. On the day following the writing of the compositions, in those grades above the sixth, the teacher handed a copy of the Hillegas scale to each member of the class. They read together the successive compositions on the scale and discussed the defects and the increasing merits of each step. Then each pupil was asked to score his own paper. Later the teacher scored the papers and sent them to the supervisor. The latter scored each paper of Grades IV to VIII inclusive. His assistant scored the high-school papers under the supervisor's direction. The agreement of the supervisor's and teachers' scores for the different grades is indicated in Table IX.

TABLE IX

COMPARISON OF SUPERVISOR'S AND TEACHERS' COMPOSITION MARKS

	Grade					
	IV	V	VI	VII	VIII	IX-X
Number of cases	37	33	36	38	31	41
Difference 0– 4 points	1	10	16	12	6	27
Difference 5–10 points	4	12	12	14	9	12
Difference 11– points	32	11	8	12	16	2

After comparing the marks as given in Table IX, the supervisor read each set of papers with the teacher who had scored them. The wide difference in marking fourth-grade papers was due to two or three causes. The supervisor unconsciously looked for the thought, the language expression of the high-school student. The teacher had emphasized short, clear sentence expression. She probably gave undue weight to the simpler child thought; in other words, she scored a composition 40 in Grade IV, which she probably would not have given more than 25, had it been written by a high-school pupil. The wide difference in Grade VIII is due to the teacher of the class marking on a lower basis than any other teacher in the school. The high-school teacher has had the Hillegas and Thorndike scales in her room throughout the year. She has trained her class in using them until the students can give quite an accurate judgment of their own papers.

The supervisor and teacher together worked out the final score for the papers on which they had disagreed by more than five points. This score was placed on record as the school's judgment of the child's ability in composition. In arriving at this final score, thought expression was given primary consideration, although the final scores of Grade IV may be an exception to the statement. Table X is a crude attempt to show the range of marking of each scorer from the final mark and to indicate how teacher and supervisor influenced each other's judgments in making out the final score.

TABLE X

VARIATIONS IN MARKING COMPOSITION PAPERS

GRADE	AVERAGE DEVIATIONS FROM FINAL SCORES			EXTREME DEVIATIONS FROM FINAL SCORES			
				Supervisor		Teacher	
	Pupil	Supervisor	Teacher	−	+	−	+
IV	....	−9.9	9.7	20	3	20	35
V	....	−2.8	.1	17	6	37	22
VI	....	−0.2	3.9	14	8	6	25
VII	8.1	2.4	−4.2	10	8	24	7
VIII	5.7	4.4	−6.5	4	15	4	21
High school	3.6	2.0	.2	5	14	5	5

Table XI is the record sheet for the seventh-grade class. It illustrates the method used in each class.

In scoring papers teachers and supervisor interpolated the scale quite freely; but before the work was completed there was a question as to whether anything had been gained by interpolation. In distributing the scores in Table XII, the final marks were tabulated under their nearest scale values.

The high-school papers were written by first- and second-year pupils.

TABLE XI

COMPOSITION RECORD SHEET. GRADE VII

Boys					Girls				
Pupil	Marks				Pupil	Marks			
	Pupil	Principal	Teacher	Final		Pupil	Principal	Teacher	Final
D. A.	26	47	36	43	A. B.	47	65	47	65
C. B.	18	36	47	44	E. B.	36	55	47	32
R. F.	36	40	36	38	C. B.	26	40	26	37
R. F.	67	45	26	38	E. C.	36	58	47	53
W. H.	36	65	58	60	A. G.	67	67	67	67
A. J.	......	79	70	70	M. H.	36	47	47	47
C. K.	36	50	47	48	N. M.	47	45	36	40
E. K.	26	45	47	46	M. O.	18	50	36	42
H. K.	36	37	36	37	L. R.	36	45	47	46
W. M.	18	50	47	48	A. R.	47	36	47	40
G. L.	36	55	47	52	E. S.	26	45	26	38
F. O.	47	58	58	58	I. W.	47	65	47	60
A. P.	26	38	21	30	F. T.	69	58	47	58
H. P.	......	63	......	63					
W. P.	26	27	36	37					
W. S.	......	45	47	46					
W. S.	36	48	47	48					
W. S.	26	50	26	40					
D. S.	47	40	36	38					
T. S.	37	40	36	37					
T. S.	47	45	36	40					
P. T.	47	55	47	50					
R. T.	36	65	47	60					

Teacher—

Date—January, 1916

TABLE XII

DISTRIBUTION. FINAL COMPOSITION MARKS

Grade	Number of Cases	Median Final Score	0	183	260	369	474	585	675	772
IV	34	35.9	1	3	6	19	5	......	......	......
V	33	38.6	......	2	11	10	7	1	2	......
VI	35	40.7	......	......	4	14	11	6	......	......
VII	39	47.0	......	......	1	12	12	9	5	......
VIII	31	47.0	......	......	1	13	6	7	4	......
IX–X (High school)	41	67.2	......	......	......	1	0	14	17	9

Working out the final scores with teachers gave the supervisor the best opportunity to study the teaching of composition throughout the school that he had found during the year. In scoring 30 or 40 papers he learned the qualities of composition for which each teacher was working; found where teachers were slighting the work; discovered their methods of teaching and of marking papers; and observed their respective interests in their pupils. This method gave the supervisor an opportunity to impress on teachers—often through their own suggestions—certain ideas that he could not give so effectively in any other way. Teachers freely admitted that they had scored papers on their prejudices rather than on the merits of the composition. They saw how wide a range of difference there may be between the marks of any two teachers on the same paper, and that a teacher can seldom give the same paper the same mark at two different scorings. A school should work for a uniform standard of marking. Because of the erratic judgment of teachers, if for no other reason, a final examination is not sufficient for the judgment of a child. A pupil's fault in composition may be analyzed through the use of the Hillegas scale. The teacher can help the child as an individual even through class instruction. Older pupils may be made interested in education as a science.

Through reading these compositions the supervisor had an opportunity to study the social life, home influences, and ideals of his pupils. It seems probable that through a series of such compositions a school might glean a knowledge of the children within its walls that would aid materially in their educational guidance.

WRITING

A copy of the Thorndike handwriting scale is found in each room of the upper grades. One teacher has supervision of all writing in the school. When a pupil can score 13 in his ordinary writing on the scale, he is excused from penmanship, unless he wants to take the work. Use of the handwriting scale by pupils and teachers is part of the daily work.

READING

Teachers asked for a test in reading. The Thorndike reading scale was used in April. Scale Alpha 2, Part I, was given to Grades IV and V. Parts I and II to Grade VI; Part II to Grades

VII and VIII; Part I, Sets I, II, and III, to Grade III. The preliminary sheet for Scale Alpha 2, together with Set I, Difficulty 4, was given to Grade II. The following results were obtained for Grade II:

	Number of rights score												
	12	11	10	9	8	7	6	5	4	3	2	1	0
Number of pupils per score......	21	9	2	....	....	4	....	....	3	1	....	2	1

In scoring the reading papers strict adherence was given to the answers suggested by Thorndike in the *Teachers' College Record* for November, 1915. The results for each class were placed on a record sheet for Thorndike reading scale, Alpha 2. Two methods of tabulating were used. One method merely counted the total number of answers right for each pupil; the other placed each pupil in that highest difficulty class where he approximately had 80 per cent of the answers right.

TABLE XIII

DISTRIBUTION OF PUPILS ACCORDING TO DIFFICULTY IN READING

GRADE	NUMBER OF PUPILS	DIFFICULTY						
		Less than 4	4	5.25	6	7	8	8⅞
II.........	43	21	22	15	....	....	....	....
III.........	34	3	10	15	6	....	....	....
IV.........	39	1	4	15	12	7	....	....
V..........	32	....	1	16	10	5	....	....
VI.........	37	....	....	5	11	18	3	....
VII........	34	....	....	4	15	14	1	....
VIII.......	22	....	....	....	5	9	7	1

The method of scoring each pupil by the number of rights for a certain part of the scale seems to give the best measure of the child's reading ability. On this score the class is ranked in reading, and these ranks were used in comparing the child's rank in reading with his rank in other subjects.

It will be advisable to give this test again next year and to combine the scores of the two tests for each child as the indication of his ability in reading.

The presentation of the results of standard tests to the public was undertaken in two ways. The supervisor each month gave a report of school affairs to the board of education. A copy of each report was printed in the local paper. The report was prepared for the purpose of keeping the public informed of what the school was trying to do. The first mention made of the use of scales and tests was in a special report on the question of vocational and educational guidance. The Ayres spelling scale and two or three other scales and tests were described somewhat in detail.

TABLE XIV

READING. THORNDIKE TEST
PERCENTAGE WRONG FOR EACH SET AS A WHOLE

Grade	4			5.25				6						
	1	2	3	1	2	3	4	1	2	3	4	5	6	7
III	3	11	6	29	6	14	26	61	30	35	73	56	73	69
IV	5	7	0	25	2½	7	2	51	33	16	33	40	48	51
V	6	3	0	9	3	15	3	48	34	3	28	34	25	31
VI	0	0	0	3	0	5	8	14	8	8	3	14	8	34
VII	....	....	....	....	....	....	....	....	....	....	....	....	....	....
VIII	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Grade	7							8							
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8
IV	69	51	61	30	69	49	56	....	....	....	....	....	....	....	....
V	60	56	56	25	65	65	56	....	....	....	....	....	....	....	....
VI	40	14	37	5	22	24	14	....	....	....	....	....	....	....	....
VII	50	21	44	15	28	34	37	48	25	50	55	52	58	85	82
VIII	13	18	31	9	4	13	31	13	27	22	27	36	22	54	40

The monthly report following the one mentioned above was given to a discussion of the results of the Trabue language test B. Particular attention was given to the erratic scores and their indication of backward and accelerate pupils. Attention was also called to the possibilities of educational guidance through the use of scales and tests. The president of the board remarked, "That is just the thing we have been waiting for." There was much more expression of interest from the board than there had been toward any previous report. At another meeting the supervisor's report centered about the algebra tests (on account of its length the discussion of the algebra tests is omitted from this paper). Charts giving the results from eight different schools were shown. They could see at a glance how their own high school compared with others. Another chart was used as the basis for explaining the attempt of the teacher and the supervisor to work over and improve the algebra course. Board members entered freely into a discussion of algebra teaching. The discussion lasted more than an hour—a feature of school-board meetings not usually found. Another meeting was given to the results of the Woody arithmetic tests; another to spelling, and to the correlation or comparison of the results of the various tests.

Through the newspaper reports people of the community became interested in the work. Many came to the school and asked for the results for their own children. The Home and School Association asked the supervisor to explain the work to the mothers, especially in its bearing on educational guidance. Such opportunities gave the supervisor a chance to gain the confidence of the public and also to explain the school's work in such a way as to gain a superior type of home and public co-operation.

No doubt the most concrete and helpful influence of the use of these standards in dealing with the public came through contact with the individual parent. The school had developed a close contact with the home. Throughout the year the supervisor was confronted with parental complaints concerning the marks given to pupils. The parent invariably came feeling that the teacher had permitted a personal prejudice to enter in giving the child his marks. The supervisor sought to overcome this personal prejudice by securing an estimate of the child's ability in various subjects which would be entirely independent of the teacher's judgment. He found that he could explain most of the tests quite readily to parents. The parent could see (for instance, in arithmetic) just how his child compared with other children of the class, and, specifically, where his child had difficulty with the test. He could see for himself a result that was in no way affected by the teacher's opinion. The interview invariably gained the confidence and closer co-operation of the parent. If the school had found no other use for the results of the standard tests than the one just mentioned, they would easily justify their use in the school that stands close to the public.

The tests prove useful in gaining a quick estimate of the ability of a new pupil. Scarcely a week goes by that new pupils do not enter the school. Often a new pupil has come from a different type of school or a school graded on a different basis. The teacher, some time during the first week, excuses him from a class recitation, gives him a test paper, and, after gaining his confidence, asks him to do his best on it. While the child's grade has in a few cases only been changed, yet the teacher has found his strong and weak points and knows better how to fit him into her regular class work.

Another practical use has been in determining promotions and demotions. If a child in any grade fell considerably below the median of the class below him in most of the subjects, his classroom work was examined closely. If there could be found no way to help him from his difficulty, he was placed in the lower class. While only a few have been demoted, there are several others in the school who cannot make one grade each year. Some provision will have to be made for caring for them. It is hoped that we can work out a scheme whereby the slower pupils may have a longer time to complete the course and yet not have to be failures or repeaters.

The bright pupils need, if anything, more attention than the slower children. On the basis of these tests during the year several pupils have been permitted to skip a grade: there were four from the third grade, two from the fourth grade, one from the fifth, and one from the sixth grade. There are 18 others who are receiving special attention from teachers in order that they may be able to do three years' work in two years. They are distributed: four from the second grade, two from the third grade, six from the fourth, two from the fifth, three from the sixth, and one from the seventh.

Arrangements have been made whereby one teacher can give at least one-third of her time next year to the coaching of accelerate and backward children. She will take special training during the summer for the work, and will co-operate with the regular teachers in caring for these special pupils. The majority of her time will be given to the brighter pupils. The Chatham School hopes, from the small beginnings it is making, to work out a promotion system elastic enough to satisfy the needs of every child. The success of the plan will depend entirely on the school's ability to reach the individual.

TABLE XV

Efficiency Test Record Sheet. Grade IV, 1915–16

Pupil's Number	Spelling				Comp.	Lang.	Arithmetic				Rdg.
	Scale Standard				Class Median						
	96	94	92	88	35.9	10.8	A. 16.9	S. 13.7	M. 8.5	D. 8.5	Rts. 14.4
2.	100	98	96	88	30	8	22	19	5	12	10
3.	68	74	80	72	40	8	17	17	10	12	13
5.	72	86	84	80	32	6	7	12	4	0	14
6.	52	34	52	24	30	6	12	10	8	7	4
9.	100	97	96	100	32	14	9	16	18	11	16
13.	100	100	100	100	36	16	19	15	9	11	20
14.	84	78	76	28	35	2	19	19	8	12	9
15.	92	80	84	68	45	12	20	19	3	0	17
28.	100	100	100	100	38	14	21	14	12	11	19
33.	88	80	88	80	26	6	15	10	5	1	6
41.	84	84	64	56	38	8	16	9	4	5	8
42.	.....	.....	100	100	40	15	23	21	21	21	20

The records for each class in all tests during the year have been kept on a single class record sheet. A few individual records from the record sheet of the fourth grade class make up Table XV. They illustrate how the child's several abilities may be studied. Pupil 13 is strong in every test. He will do three years' work in two years. Pupil 33 is weak in every test; she is slow; apparently there is no way whereby the teacher can keep her from becoming a backward pupil. Pupil 15 is erratic in everything he does. One spelling mark is 92; another, 68. In addition he scored 20, and in division 0. Pupil 14 is weak in reading, spelling, and language. He shows up well in composition and arithmetic. After six months of careful watching his teacher believes him a good student in anything that requires thinking, but regards him as exceedingly poor in any subject that requires interpretation of the printed page. The record of each individual pupil indicates strength or weakness in each of the several abilities tested. The value of the record lies in the testing out in the classroom of the facts it seems to indicate. There is reason to believe that such a study may prove the basis of a work in educational guidance.

One set of tests would not be a fair means of judging a child's future. Successful educational guidance will require a study of the individual child covering several years. The work would begin with certain mental tests in the earlier school years. In about the fourth grade, the pedagogical tests would begin; these tests would be repeated in various forms throughout the following years. The results of all tests would be checked back against the child's classroom work by teachers and supervisors. By the end of the sixth year the school ought to have a definite idea as to the field toward which the child should be guided in his high-school work.

Standard tests have proved an effective means in supervision. Through their use teachers are improving the technique of their method and exercising a nicer judgment in the selection of subject-matter. Pupils are working to exceed their own record. Teachers and older pupils are coming to understand the scientific idea of education as it applies to the ordinary classroom. In no other way could the principal gain so close a knowledge of each individual child in the school. This knowledge is serviceable in placing new pupils, in determining promotions, in selecting accelerates and defectives, in searching out the special difficulties of the individual, and in gaining the co-operation of the parent. The results of the tests have proved of interest to the public. On the basis of these results the board of education has employed a teacher to give approximately one-third of her time to the testing and supervision of work with special pupils. The school has made a start in the study of its children that will eliminate a large part of the wasted time and effort that results from the choice of the wrong high-school course. During the coming year standard tests will be used more systematically to gain desired results in the supervision of the Chatham School.